## READiStrength

## Resource efficient and data-driven integrated log and board strength grading

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tinyurl.com/readistrength

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Forest Research Institute Baden-Württemberg



## **Project overview**

- READiStrength
- Jan. 2019 March 2022
- Budget: 1 Million Euros
- Countries: Sweden, Germany, Austria
- Leader: Olof Broman, LTU



## Introduction

 sawmill processes for construction timber

log delivery

visual quality

assessment

🔊 planing, drying

NDT strength

assessment

sawing

Strength grading scenarios

Log scanning technologies







Board strength prediction

→ optimised pre-sorting

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Board strength prediction

→ optimised pre-sorting

#### Log scanning technologies

#### **3D Log Scanning**





#### **Discrete x-ray**





# CT - Computed bootstanding



TY

#### **Strength prediction results**



#### **Finite Element Modelling**



#### Impacts

- Log strength prediction

   → potential for improved
   log sorting and grading
- Better allocation of the most suitable logs to each target product
   → improved raw material efficiency
- Models for different sawmill scenarios

- 7 conference contributions
- 1 peer reviewed article already published, further articles in preparation
- 1 Master's thesis
- 1 PhD thesis
- 4 trade journal articles
- 2 state of the art reports on scenarios and strength grading

#### **Summary and outlook**

- valuable contribution to log strength grading
- high added value through the international scientific cooperation
  - $\circ$  more different wood species
  - o more different scanning technologies
  - $\circ~$  broadened the views of the researchers
  - development of new approaches enabled by the international cooperation

#### Challenges

- combining data from different organisations
- few personal meetings due to the pandemic

#### Outlook

- research on log strength prediction continues – especially FEM
- knowledge exchange between institutes continues

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## Thank you!



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